CLAIMS

1. A method for managing transactions among nodes in a network including a plurality of nodes which execute processes involved in the transactions, comprising:

   storing machine-readable specifications of a plurality of participant interfaces, the participant interfaces identifying transactions, the respective transactions being identified by definitions of input documents, and definitions of output documents, the definitions of the input and output documents comprising respective descriptions of sets of storage units and logical structures for the sets of storage units;

   receiving data comprising a document through a communication network;

   parsing the document according to the specifications to identify an input document and one or more transactions which accept the identified input document;

   providing at least a portion of the input document in a machine-readable format to transaction processes associated with the one or more identified transactions.

2. The method of claim 1, including:

   providing a repository storing a library of logical structures, schematic maps for logic structures, and definitions of documents comprising logic structures used to build participant interface descriptions.

3. The method of claim 2, including providing access to the repository through the communication network to other nodes in the network.

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4. The method of claim 1, wherein the machine-readable specification includes documents compliant with a definition of a participant interface document including logical structures for storing an identifier of a particular transaction, and at least one of definitions and references to definitions of input and output documents for the particular transaction.

5. The method of claim 1, wherein the machine-readable specifications include documents compliant with a definition of a participant interface document including logical structures for storing an identifier of the participant interface, and for storing at least one of specifications and references to specifications of a set of one or more transactions supported by the participant interface.

6. The method of claim 5, wherein the documents compliant with a definition of a participant interface document include a reference to a specification of a particular transaction, and the specification of the particular transaction includes a document including logical structures for storing at least one of definitions and references to definitions of input and output documents for the particular transaction.

7. The method of claim 1, wherein the storage units comprise parsed data.

1   8.   The method of claim 7, wherein the parsed data in at least one of

2 the input and output documents comprises:

3   character data encoding text characters in the one of the input and output

4 documents, and

5   markup data identifying sets of storage units according to the logical

6 structure of the one of the input and output documents.

1   9.   The method of claim 8, wherein at least one of the sets of storage

2 units encodes a plurality of text characters providing a natural language word.

1   10.   The method of claim 9, wherein the specification includes

2 interpretation information for at least one of the sets of storage units identified

3 by the logical structure of at least one of the input and output documents,

4 encoding respective definitions for sets of parsed characters.

1   11.   The method of claim 9, wherein the storage units comprise

2 unparsed data.

1   12.   The method of claim 1, wherein the providing at least a portion of

2 the input document in a machine-readable format to transaction processes

3 associated with the one or more identified transactions includes executing a

4 routing process according to a processing architecture, and including:

5   compiling in response to the definitions of the input and output

6 documents in the participant interfaces, data structures corresponding to the sets

7 of storage units and logical structures of the input and output documents

8 compliant with the processing architecture of the transaction process,

9 instructions executable by the system to translate the input document to the

10 corresponding data structures.

13. The method of claim 1, wherein the providing at least a portion of the input document in a machine-readable format to transaction processes associated with the one or more identified transactions includes executing a routing process according to a processing architecture, and including translating at least of portion of the incoming document into a format readable according to the processing architecture.

14. The method of claim 13, wherein the translating includes producing programming objects including variables and methods according to the processing architecture of the routing process.

15. The method of claim 1, wherein providing at least a portion of the input document in a machine-readable format to transaction processes associated with the one or more identified transactions, includes routing the portion of the input document to the identified transactions.

16. The method of claim 15, wherein the routing includes sending the input document on the communication network to a node executing one of the identified transactions.

17. The method of claim 1, wherein the definitions of the input and output documents comprise document type definitions compliant with a standard Extensible Markup Language XML.

18. The method of claim 17, wherein the specifications of participant interfaces comprise definitions of documents according to document type definitions compliant with a standard Extensible Markup Language XML.

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19.   The method of claim 1, wherein the repository includes standardized document types for use in a plurality of transactions, and wherein the definition of one of the input and output documents includes a reference to a standardized document type in the repository.

20.   The method of claim 19, wherein the repository includes a standardized document type for identifying participant processes in the network.

21.   The method of claim 19, including providing a repository of interpretation information for logical structures, including interpretation information identifying parameters of transactions.

22.   The method of claim 1, wherein the transaction processes have respectively one of a plurality of variant transaction processing architectures, and including translating at least of portion of the incoming document into a format readable according to the variant transaction processing architecture of the respective transaction processes, and routing the translated portion to the respective transaction processes.

23.   The method of claim 22, wherein the translating includes producing programming objects including variables and methods according to the variant transaction processing architecture of the respective transaction processes.

24.   The method of claim 23, wherein the variant transaction processing architectures of the transaction processes comprises a process compliant with an interface description language.

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(25.) Apparatus for managing transactions among nodes in a network including a plurality of nodes which execute processes involved in the transactions, comprising:

a network interface;

memory storing data and programs of instructions, including machine-readable specifications of a plurality of participant interfaces, the participant interfaces identifying transactions, the respective transactions being identified by definitions of input documents, and definitions of output documents, the definitions of the input and output documents comprising respective descriptions of sets of storage units and logical structures for the sets of storage units;

a data processor coupled to the memory and the network interface which executes the programs of instructions; wherein the programs of instructions include

logic to receive data comprising a document through a network interface;

logic to parse the document according to the specifications to identify an input document and one or more transactions which accept the identified input document; and

logic to provide at least a portion of the input document in a machine-readable format to transaction processes associated with the one or more identified transactions.

26. The apparatus of claim 25, including a repository stored in memory accessible by the data processor storing a library of logical structures, schematic maps for logic structures, and definitions of documents comprising logic structures used to build participant interface descriptions.

27. The apparatus of claim 25, including logic to access a repository stored in memory through the network interface storing a library of logical structures, schematic maps for logic structures, and definitions of documents

4   comprising logic structures used to build participant interface descriptions.

1   28.   The apparatus of claim 25, wherein the machine-readable
2   specification includes documents compliant with a definition of a participant
3   interface document including logical structures for storing an identifier of a
4   particular transaction, and at least one of definitions and references to definitions
5· of input and output documents for the particular transaction.

1   29.   The apparatus of claim 25, wherein the machine-readable
2   specifications include documents compliant with a definition of a participant
3   interface document including logical structures for storing an identifier of the
4   participant interface, and for storing at least one of specifications and references
5   to specifications of a set of one or more transactions supported by the participant
6   interface.

1   30.   The apparatus of claim 29, wherein the documents compliant with
2   a definition of a participant interface document include a reference to a
3   specification of a particular transaction, and the specification of the particular
4   transaction includes a document including logical structures for storing at least
5   one of definitions and references to definitions of input and output documents
6   for the particular transaction.

1   31.   The apparatus of claim 25, wherein the storage units comprise
2   parsed data.

1   32.   The apparatus of claim 31, wherein the parsed data in at least one
2   of the input and output documents comprises:
3   character data encoding text characters in the one of the input and output
4   documents, and

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5   markup data identifying sets of storage units according to the logical

6   structure of the one of the input and output documents.

1   33.   The apparatus of claim 32, wherein at least one of the sets of

2   storage units encodes a plurality of text characters providing a natural language

3   word.

1   34.   The apparatus of claim 33, wherein the specification includes

2   interpretation information for at least one of the sets of storage units identified

3   by the logical structure of at least one of the input and output documents,

4   encoding respective definitions for sets of parsed characters.

1   35.   The apparatus of claim 33, wherein the storage units comprise

2   unparsed data.

1   36.   The apparatus of claim 25, wherein the logic to provide at least a

2   portion of the input document in a machine-readable format to transaction

3   processes associated with the one or more identified transactions includes a

4   routing process according to a processing architecture, and including:

5   a compiler responsive to the definitions of the input and output

6   documents in the participant interfaces, to compile data structures corresponding

7   to the sets of storage units and logical structures of the input and output

8   documents compliant with the processing architecture of the transaction

9   process, and to compile instructions executable by the system to translate the

10   input document to the corresponding data structures.

1   37.   The apparatus of claim 25, wherein the logic to provide at least a

2   portion of the input document in a machine-readable format to transaction

3   processes associated with the one or more identified transactions includes a

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4 routing process according to a processing architecture, and including logic to
5 translate at least of portion of the incoming document into a format readable
6 according to the processing architecture.

1   38.   The apparatus of claim 37, wherein the logic to translate includes
2 producing programming objects including variables and methods according to
3. the processing architecture of the routing process.

1   39.   The apparatus of claim 25, wherein logic to provide at least a
2 portion of the input document in a machine-readable format to transaction
3 processes associated with the one or more identified transactions, includes a
4 router to route the portion of the input document to the identified transactions.

       40.   The apparatus of claim 39, wherein the router includes logic to
send the input document on the network interface to a node executing one of
the identified transactions.

       41.   The apparatus of claim 25, wherein the definitions of the input
and output documents comprise document type definitions compliant with a
3 standard Extensible Markup Language XML.

1   42.   The apparatus of claim 41, wherein the specifications of
2 participant interfaces comprise definitions of documents according to document
3 type definitions compliant with a standard Extensible Markup Language XML.

1   43.   The apparatus of claim 26, wherein the repository includes
2 standardized document types for use in a plurality of transactions, and wherein
3 the definition of one of the input and output documents includes a reference to a
4 standardized document type in the repository.

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44.   The apparatus of claim 26, wherein the repository includes a standardized document type for identifying participant processes in the network.

45.   The apparatus of claim 25, wherein the transaction processes have respectively one of a plurality of variant transaction processing architectures, and including logic to translate at least of portion of the incoming document into a format readable according to the variant transaction processing architecture of the respective transaction processes, and to route the translated portion to the respective transaction processes.

46.   The apparatus of claim 45, wherein the logic to translate produces programming objects including variables and methods according to the variant transaction processing architecture of the respective transaction processes.

47.   The apparatus of claim 45, wherein the variant transaction processing architectures of the transaction processes comprises a process compliant with an interface description language.

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